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United States Patent [19]

Iwamoto et al.

[11] **Patent Number:** 5,150,231[45] **Date of Patent:** Sep. 22, 1992[54] **IMPACT RESISTANT FERROELECTRIC
LIQUID CRYSTAL APPARATUS**

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[52] **U.S. Cl.** 359/44; 359/48; 359/83; 359/100

[58] **Field of Search** 350/331 T, 334, 350 S, 350/331 R; 359/44, 83, 100, 48

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[57] **ABSTRACT**

A liquid crystal display apparatus is provided with a liquid crystal panel comprising a pair of substrates each provided with an electrode and a liquid crystal disposed between the pair of substrates. A supporting member having a frame supports the liquid crystal panel, and an elastic member for secures the liquid crystal panel in a floating state to the frame of the supporting member so as to define an almost closed space enclosed with the liquid crystal panel, the supporting member and the elastic member. A backlight illuminates the liquid crystal panel below the supporting member so as to define the almost closed space enclosed with the liquid crystal panel, the supporting member, the elastic member and the backlight.

32 Claims, 10 Drawing Sheets